

ATC-810

Twin Engine CPT/IFR Flight Simulator

Realism True to Flight™



ANALOG TRAINING COMPUTERS

ATC-810 Twin Engine CPT/IFR Flight Simulator

**Attention Air Taxi, Commuter, Airline, Flight Schools,
Corporate and Multi-Engine Operators —**

**THE TRUE-TO-FLIGHT SIMULATOR
DESIGNED FOR THE SERIOUS
MULTI-ENGINE PILOT IS NOW
AVAILABLE FROM ATC.**

Designed to satisfy exacting industry
needs — *your* needs — the 810
embodies state-of-the-art
achievement in simulator
technology with its dedi-
cated microprocessor-
controlled system.



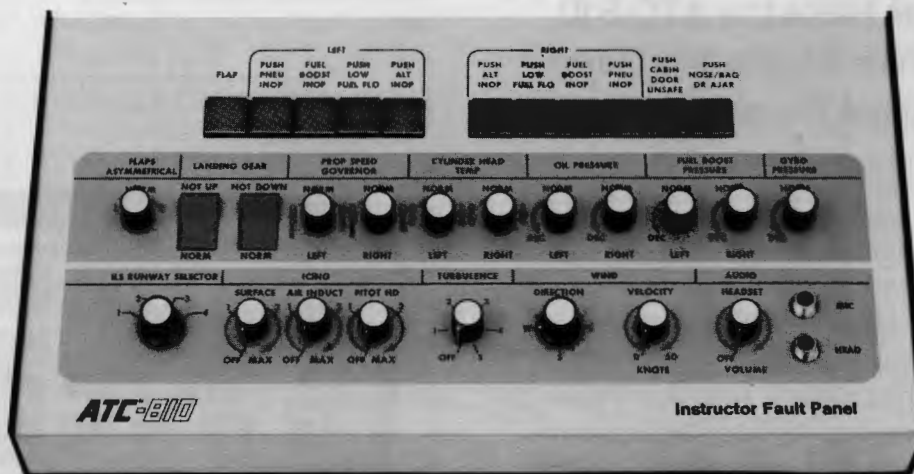
THE ATC-810 FLIES LIKE YOUR AIRPLANE.

The yoke is responsive and the trims realistic. Pitch trim relieves the force the pilot must exert on the yoke; nose trim relieves the foot pressure the pilot must exert on the rudder pedal to maintain directional control. Pedal pressures are a function of airspeed so near Vmc the pedals become "soft" and at cruise the pedals are "firm."

The following exercise illustrates the 810's true-to-flight performance: An engine failure causes a deflection of the rudder as the ATC-810 gives the indications of yaw into the bad engine. As you step on the rudder on the side of the operating engine, up to 150 lbs. of foot pressure are required to maintain directional control. Go through your emergency checklist, shutting down and feathering the bad engine. Trim out the pedal pressure and the yoke pressure with the nose trim and the pitch trim and add a little aileron trim into the good engine to bring the aircraft back to stable flight within a "one engine out" flight performance envelope.

ALL THIS, AND AN INSTRUCTOR FAULT CONSOLE TOO.

The 810 comes with an Annunciator Warning Panel and an Instructor Fault Console, vital features you expect to find in flight trainers capable of simulating cockpit emergency procedures. The Instructor Fault Console on the ATC-810 enables simulation of 23 aircraft system problems/failures and the applicable instruments respond in a realistic manner. A multitude of problems and fault conditions can be created by using combinations of failures. For instance, an instructor can reduce fuel pressure to the low pressure limit which will cause the Fuel Boost Annunciator to illuminate. Proper pilot response of emergency fuel pump "ON" will restore fuel pressure to the safe operating range. However, the instructor can continue to reduce fuel pressure and cause an engine failure.



ATC-810 TWIN ENGINE FLIGHT SIMULATOR: MEETING YOUR SPECIFIC FLIGHT TRAINING

NEEDS. Designed with the realistic flight characteristics of a 6500 - 8000 lb. cabin class twin, the 810's applications run from primary multi-engine student teaching to advanced pilot training. It should be used to satisfy the training requirements for any twin pilot and is particularly suitable FOR PART 135 OPERATORS.

The ATC-810 represents that rare and sought-after combination: a highly sophisticated twin engine flight trainer at an absolutely unbeatable price.

Call ATC now for more information at 800-631-4198 (in NJ 201-870-9200; Telex 1-32443). Better yet, place your order for an ATC-810 Twin Engine CPT/IFR Flight Simulator — today!

Performance Characteristics

Outstanding Features That Make the ATC-810 A Twin Engine Simulator Without Equal.

- **TOTALLY REALISTIC ENGINE START-UP AND SHUTDOWN PROCEDURES** for the ATC true-to-flight experience.
- **The 810's PROGRAMMABLE READ-ONLY MEMORY (PROM)** creates a 150 x 150 NM navigational area which exactly duplicates the Air Traffic Control system.
- **Every ATC-810 simulator comes equipped with our STANDARD NAVIGATIONAL AREA PROGRAM** which creates the low-altitude chart for the New York to Philadelphia area covering major airports like JFK, LaGuardia, Newark, Teterboro, Philadelphia International and North Philadelphia.

Typically, the standard navigational area includes:

- ☐ 65 airports for takeoff and landing
 - ☐ 36 VORS stations
 - ☐ 23 LOMS
 - ☐ 18 ADF stations
 - ☐ 38 ILS approaches
 - ☐ 4 CAT II approaches
 - ☐ 153 instrument approaches
- **OM/MM/IM LIGHTS** flash with coordinated audio. Audio capability includes engine RPM synchronization sounds, also stall and gear warning sounds.
 - **RUDDER PEDAL SENSITIVITY AND DEFLECTION CAPABILITIES** are a function of airspeed and require 150 lbs. of torque pressure for one engine out maneuvers.



- **THE YOKE IS RESPONSIVE AND TRIM INPUTS ARE REALISTIC.** Rate of turn is proportional to angle of bank and inversely related to airspeed.

- **POWER QUADRANT/FUEL MANAGEMENT ASSEMBLY** includes:

- Dual throttle, prop and mixture controls
- Elevator, rudder and aileron trim controls
- L/R fuel shutoff
- Crossfeed
- L/R inboard/outboard fuel selectors

Fuel system management duplicates the same functions of an actual twin engine aircraft.

- **ENGINE GAUGES SUCH AS CHT, EGT, OIL PRESSURE/TEMPERATURE** react to changes of MP, RPM, cowl flap settings, and airspeed with the responses pilots expect in a twin engine aircraft.
- **TAKEOFF/LANDING MODES** require the use of toe braking, rudder steering, differential thrust, and proper V speeds compatible with twin capabilities.
- **THE ATC METHOD OF DUPLICATING FLIGHT CHARACTERISTICS**, designed into the 810 twin, creates the smoothness of actual aircraft performance. The relationship between MP, RPM, climb rate, pitch attitude, flap settings, and their effect on flight performance and engine gauges are totally realistic.
- **NAV/COM RADIO STACK** incorporates digital LED frequency display. Instrument navigation is accomplished exactly as it would be in actual flight — tune in the correct navaid frequency and fly. All nav aids are simultaneously functional.

- **POSITION PRESET** allows the operator to place the simulator at a predetermined "point in space" without having to "fly" to that starting point.

- **COCKPIT PROCEDURES TRAINER APPLICATIONS:**

- Standard with each 810 is an Instructor Fault Console which plugs into the simulator. By simply turning the appropriate knob or flipping a switch, the instructor can create emergency situations like Pitot Head Icing, Surface Icing, Asymmetrical Flap Conditions, Loss of Oil/Fuel/Gyro Pressure, and more.
- Different system malfunctions are indicated on the Cockpit Annunciator Panel.
- Each emergency condition must be remedied correctly by the pilot following emergency checklist procedures.
- The instructor can create additional fault conditions or any combination of system malfunctions, thus preparing the pilot for instantaneous real-world reaction.

- **THE ATC-810 OWNER'S MANUAL** details all of the operational capabilities of the 810 system and provides the operator with Instructor/Student checklist and associated FliteWare information.

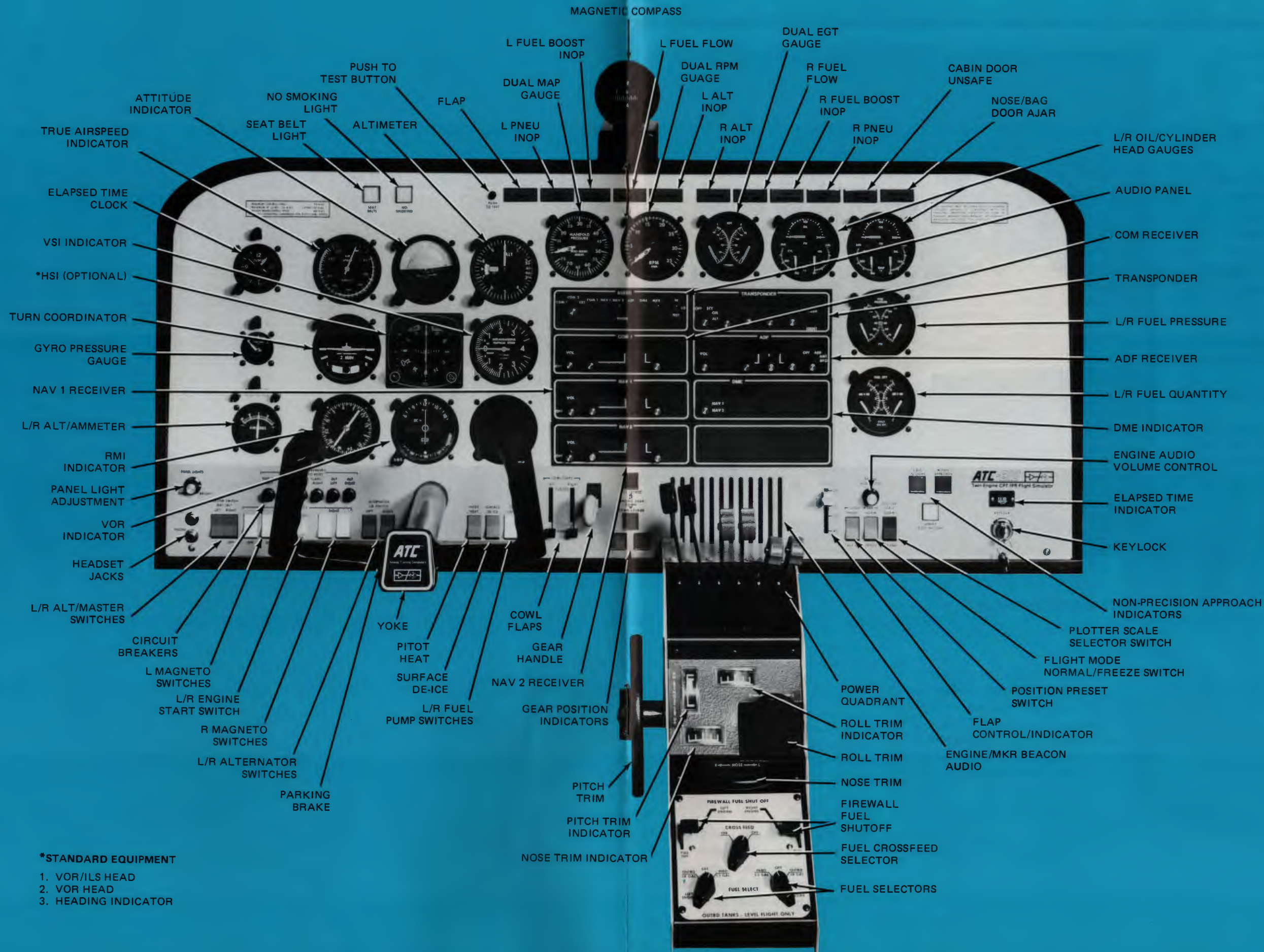
- **FLITEWARE** standard with the 810 system includes tape cassettes which insert the pilot into the Air Traffic Control Environment, complete with Controller/Pilot communication and traffic background associated with actual flight.

Optional Features:

- **The HORIZONTAL SITUATION INDICATOR (HSI)** replaces the standard heading and ILS/VOR instruments. The factory-installed HSI option duplicates in totality the same function of an actual aircraft's HSI system, providing continually slaved gyro magnetic heading, VOR, LOC, and GS information in a single display.
- **The FLIGHT PLOTTER** can be switched to match the scale of the low-altitude chart and provides an exact ground track of the course flown by the pilot.
- **FUTURE OPTIONS** (fully compatible with 810 and based on user needs and FAA approval):
 - Visual Display System with takeoff and landing capability
 - Flight Director
 - RNAV



The Heart of the ATC-810 System



***STANDARD EQUIPMENT**
1. VOR/ILS HEAD
2. VOR HEAD
3. HEADING INDICATOR

Features

- Realistic flight characteristics
- Flight performance above and below Vmc
- Service ceiling FL 240
- Rate of turn proportional to angle of bank and inversely proportional to airspeed
- Engine start and restart sequence in-flight and on the ground
- Fuel management including X feed
- Takeoff and landing modes
- Independent engine feathering
- Full IFR navigational capability with "real-world" navigation
- Comprehensive instructor fault console
- Annunciator warning panel
- Realistic engine-out and emergency procedures
- Trims relieve yoke and rudder pedal pressures
- LED radio frequency displays
- OM/MM/IM coded audio and twin engine sounds including prop sync, stall and gear warning
- Differential thrust control
- Toe brakes
- Gear-in-transit and down-and-locked lights
- Verify field in sight mode
- Aircraft position preset
- Freeze mode
- Instant flight set-up mode
- CAT II capability
- Cockpit enclosure
- Pilot seat
- Jump seat
- Lighted Panel



Support and Service

Limited Warranty

ATC-810 units are warranted to be free of defects in material and workmanship for a period of 90 days from date of purchase. During that period, ATC will repair any product which in the judgement of ATC, has proven to be defective in material or workmanship within the warranty period.

Service Policy

Protect your investment year after year with our low-cost service policy, available for a nominal fee before the expiration of the 90-day warranty period.

The service policy is valid for an additional one-year period after the 90-day warranty period concludes and is renewable on a yearly basis thereafter. It covers parts, labor and return shipment to the customer. Service advisors are available by phone to provide customer service in the event of a procedure or maintenance problem.

ATC Service Centers

In the event of a difficulty with your 810, we advise you to contact ATC where our customer service representatives are available for discussion or to provide the name and address of the closest service center.

Flight Characteristics (typical)

Pilot Controls:

Control column
Rudder pedals
Throttle controls
Propeller controls
Mixture controls
Elevator trim
Roll trim
Rudder trim
Fuel shut-off
Crossfeed
Fuel selector-inboard/outboard
Split master/alternator switches
Magnetos switches
Start switch
Fuel pump switches
Landing gear selector
Flap control selector
Cowl flaps control
Circuit breakers
Pitot heater switch
Panel intensity dimmer switch
De-icing control switches
Key lock
Parking brake
Push-to-test lamp verification
Engine audio volume
Panel lights adjustment

Radio/NAV Equipment:

Digital DME
RMI indicator/ADF indicator
VOR/ILS head
VOR/LOC head
Clock/lapse time
Audio marker beacon receiver
ADF receiver
2 200-channel NAV receivers
720-channel COM radio
4096-code transponder
Audio control panel
Mike and earphone jacks
2 head sets with boom mikes
Push-to-talk button
Lapse-time meter (Hobbs)

Flight Instruments:

Airspeed indicator (TAS)
Turn coordinator
Attitude indicator
Heading indicator
Vertical speed indicator
Altimeter
Magnetic compass

Engine Gauges:

Dual manifold pressure
Dual RPM
Dual EGT
Dual fuel pressure
Dual oil pressure
Dual CHT
Dual oil temperature
Two fuel gauges
Gyro pressure gauge
Ammeter

Annunciator Warning Panel:

Flap Condition
Left Pneumatic
Right Pneumatic
Left Boost Pump
Right Boost Pump
Left Fuel Flow
Right Fuel Flow
Left Alternator Inoperative
Right Alternator Inoperative
Cabin
Baggage
No Smoking
Seat Belt

Instructor Fault Console:

Asymmetrical Flaps
Landing Gear Inoperative
Propeller Over/Under Speed
Cylinder Head Temperature Over/Under
Loss of Oil Pressure
Loss of Fuel Pressure
Gyro Pressure Malfunction
Wind Direction and Velocity Control
Turbulence Control
Icing-Wing
Icing-Air Induction
Icing-Pitot Head
Microphone and Earphone Jacks

Options:

Horizontal Situation Indicator (HSI)
Flight Plotter

Weight	(lb)	6500 - 8000 (class)
Speeds	V _{ne}	236
	V _{no}	187
	V _a	162
Takeoff	V _{mc}	78
Speeds	V _{yse}	106
	V _{xse}	104
Stall		
Speed	Gross, Power off, flaps down	74
Climb at Sea Level		
	(fpm)	
All eng		1,120
Eng out		230
Ceiling (ft)		
All eng		24,000
Eng out		13,700
Cruise - FL 120		
55% TAS		173
65% TAS		191
Range at Gross Wt (nm)		490



ATC-810 Teaching Capabilities

General

- Basic Instrument Scan
- Attitude Instrument Flight
- ADF, VOR, LOC Tracking
- ADF, VOR, LOC Holding Patterns
- VOR/DME Intersection Holding Patterns
- DME Arcs
- ATC Procedures
- ATC Communications and Radio Procedures
- Partial Panel Procedures
- Takeoffs and Landings
- Missed Approach Procedures
- Normal and Steep Turns
- Climbs/Descents
- Slow Flight
- Stalls and Recoveries
- Cockpit Procedures
- Cross-Country Procedures
- Orientation Problems
- Diversions to Alternate Airports
- Holding Pattern Flying
- Wind Correction Angle
- All Instrument Approaches
- Rough Air Operations
- Flight Freeze Mode

Emergency and Engine Inoperative Procedures

- Engine feathering and securing procedures
- Engine failure before rotation
- Engine failure during takeoff
- Engine failure during climb
- Engine failure above V_{mc}
- Maneuvering with one engine inoperative
- Engine out approaches
- Landing gear not locked UP or DOWN
- Wing icing
- Air induction icing
- Pitot head icing
- Asymmetrical flap condition
- Pneumatic system problems
- Fuel boost pumps (one or both) inoperative
- Oil pressure problems
- Cylinder head temperature problems
- Propeller sync problems (over and under speed)
- Fuel flow interruptions



Navigational Capabilities

Enroute

- ADF tracking
- VOR tracking
- VOR/DME tracking
- Dual NAV'S allow position fixing
- Track all airways
- Fly preferred routes
- SID (Departures)
- STARS (Approaches)

Approaches

- ADF approaches
- VOR approaches
- VOR/DME approaches
- DME arc approaches
- Localizer approaches
- Localizer Back Course approaches
- SDF approaches
- ILS approaches
- ILS Back Course approaches
- Category II ILS approaches

Equipment Specifications

CHARACTERISTIC

Power Requirements	115V - 60Hz or 220V - 50Hz
Overall:	
Height	67½ in.
Width	44 in.
Depth	60 in.
Weight (approx.)	600 lbs.



ATC has modeled the 810's performance and flying qualities after those of a turbo-charged, 6500 - 8000 lb. cabin class twin. Typical aircraft in this class are the Cessna 400 Series, Piper Navajo/Chieftain and Beech Baron/Duke.



Also Available from ATC:

- **ATC-610**
Personal Flight Simulator
- **ATC-710**
Professional Flight Simulator
- **ATC-112H**
Helicopter IFR Flight Simulator



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